

A B S T R A C T

A re-encryption system according to this embodiment includes a file sharing apparatus and a re-encryption apparatus. Upon receiving a file request from the client apparatus, the file sharing apparatus acquires a first encrypted file based on the file request, and transmits a re-encryption request including the first encrypted file to the re-encryption apparatus. The re-encryption apparatus re-encrypts the first encrypted file included in the re-encryption request to the second encrypted file based on the re-encryption key, and transmits the second encrypted file to the file sharing apparatus. The file sharing apparatus transmits the second encrypted file to the client apparatus. The client apparatus obtains the file by decrypting the second encrypted file based on a private key corresponding to the public key of the member.